

**Amendment to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1–24 (canceled)

25. (currently amended) A system for priming a microfluidic chip, comprising:

a base unit;

a top unit arranged to be removably attached to the base unit, the top unit including an exchangeable first module having a plurality of cavities arranged to align with a plurality of wells in a first microfluidic chip when the first microfluidic chip is positioned on the base unit and covered by the top unit, at least one of the first module cavities including a pressure port; and

a coupling element arranged to couple the top unit with a ~~pressurized fluid~~ pressure source; and

a priming fluid.

26. (currently amended) The system of claim 25, wherein the ~~pressurized fluid~~ pressure source comprises a pumping unit.

27. (previously presented) The system of claim 26, wherein the pumping unit is one of a manual pump and an automatic pump.

28. (previously presented) The system of claim 25, wherein the first module pressure port is in fluid communication with the pressurized fluid source via the coupling element.

29. (previously presented) The system of claim 28, wherein the first microfluidic chip well that aligns with the first module cavity including the first module pressure port is in fluid communication with the pressurized fluid source via the first module pressure port.

30. (previously presented) The system of claim 25, wherein the base unit includes a locating arrangement, the locating arrangement being arranged to position the first microfluidic chip with respect to the base unit.

31. (previously presented) The system of claim 25, wherein the base unit includes a pressure block and a resilient pressure pad, and wherein the first microfluidic chip is positioned on the pressure block, and the pressure block is positioned on the resilient pressure pad.

32. (previously presented) The system of claim 25, wherein the first microfluidic chip includes a sipper and the base unit includes at least one opening through which the sipper may be inserted.

33. (previously presented) The system of claim 25, wherein the top unit further includes a top plate, the first module being removably coupled to the top plate.

34. (previously presented) The system of claim 25, wherein the top unit further comprises an exchangeable second module, the second module being exchangeable with the first module, the second module having a plurality of cavities arranged to align with a plurality of wells in a second microfluidic chip when the second microfluidic chip is positioned on the base unit and covered by the top unit, at least one of the second module cavities including a pressure port, the configuration of the second module being at least partially different from the configuration of the first module.

35. (previously presented) The system of claim 34, wherein the top unit is arranged to be coupled to only one of the first module and the second module at a time.

36. (currently amended) A system for priming a microfluidic chip, comprising:  
a base unit;

a first top unit arranged to be removably attached to the base unit, the first top unit having a plurality of cavities arranged to align with a plurality of wells in a first microfluidic chip when the first microfluidic chip is positioned on the base unit and covered by the first top unit, at least one of the first top unit cavities including a pressure port;

a second top unit arranged to be removably attached to the base unit, the second top unit being exchangeable with the first top unit such that only one of the first top unit and the second top unit is removably attached to the base unit at a time, the second top unit having a plurality of cavities arranged to align with a plurality of wells in a second microfluidic chip when the second microfluidic chip is positioned on the base unit and covered by the second top unit, at least one of the second top unit cavities including a pressure port, the configuration of the second module top unit being at least partially different from the configuration of the first module top unit; and

a coupling element arranged to couple one of the first top unit and the second top unit with a pressurized fluid pressure source; and

a priming fluid.

37. (currently amended) The system of claim 36, wherein the pressurized fluid pressure source comprises a pumping unit.

38. (canceled)